



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10  
1200 6<sup>TH</sup> AVENUE  
SEATTLE, WASHINGTON 98101**

**DATE:** See date of Section Chief signature

**SUBJECT:** CLEAN AIR ACT INSPECTION REPORT  
Kinder Morgan Willbridge & Linnton Terminals, Portland, Oregon

**FROM:** Daniel Heins, Environmental Scientist  
Air Toxics Enforcement Section, EPA Region 10

**THRU:** Derrick Terada, Acting Section Chief  
Air Toxics Enforcement Section, EPA Region 10

**TO:** File

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**BASIC INFORMATION**

**Facility Name:** Kinder Morgan Willbridge & Linnton Terminals  
**Facility Location:** 5880 NW St. Helens Road, Portland, OR 97210

**Date of Inspection:** June 22, 2022

**EPA Inspector(s):**

1. Daniel Heins, Environmental Scientist

**Other Attendees:**

1. Lane Karabaic, Area Manager – Kinder Morgan
2. Andrew Holbrook, Northwest Operations Manager – Kinder Morgan
3. Sean Gray, Operations Supervisor – Kinder Morgan

**Contact Email Address:** Lane\_Karabaic@kindermorgan.com

**Purpose of Inspection:** Tanks inspection

**Facility Type:** Bulk fuels terminal / gasoline distribution facility

**Arrival Time:** 13:30

**Departure Time:** 15:40

**Inspection Type:** Announced Inspection

## **OPENING CONFERENCE**

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☐ Provided Small Business Resource Information Sheet
- ☒ Small Business Resource Information Sheet not provided. Reason: Not a small business
- ☒ Provided CBI warning to facility

The following information was obtained verbally from Kinder Morgan representatives.

### **Process Description:**

Kinder Morgan stores gasoline, diesel, Jet A, transmix, ethanol, and biodiesel at its Willbridge and Linnton Terminals ("the Facility"). At this terminal, the transmix is mixed Jet A and diesel. The Linnton Terminal is primarily diesel, except for two gasoline external floating roof tanks. Kinder Morgan does not itself own any of the product, but rather stores product on behalf of its customers. Kinder Morgan, Phillips66, and Chevron share pipe interconnections, allowing transfers between tanks on the different properties and the ability to receive product through the other facilities' docks. The Linnton and Willbridge Terminals are linked by pipe, as are the other five terminals in the area.

The Facility receives petroleum products via the Olympic Pipeline, barges/marine vessels, and rail; ethanol primarily by vessel, but also rail and small amounts by truck; and biodiesel by rail and small amounts by truck. The Facility sends petroleum products to Eugene and Jet A to PDX airport both via pipeline. All products are loaded out onto trucks. Petroleum products are also loaded onto barges/marine vessels. No product is shipped out by rail. The Facility has a zinc carbon vapor recovery unit (VRU) at the truck rack to control loading emissions. There is a booster to convey captured vapors from marine loading to the VRU.

## **TOUR INFORMATION**

**EPA Tour of the Facility:** Yes

### **Data Collected and Observations:**

Daniel Heins made observations with a FLIR GF320 optical gas imaging camera ("the FLIR"), capable of seeing hydrocarbon emissions plumes. EPA also used a Thermofisher TVA2020 flame ionization device ("the TVA") to measure the total hydrocarbon concentration in parts per million as methane (ppm) from vents or through hatches at the tops of tanks.

Daniel Heins toured the northwest portion of the Willbridge Terminal. See Appendix A for site maps. This was where all gasoline and ethanol tanks at the Facility are located, with the exceptions of external floating roof tanks #45028 and 59029 at the Linnton terminal.

Daniel Heins observed emissions plumes out of tanks 123, 128, 85, 101, 84, 124, 116, and 134, all of which contained gasoline. For each of these tanks, he then took TVA readings from center vents if available or from rim vents lifted by Facility personnel to facilitate readings.

Daniel Heins made observations of tanks 12003, 118, and 139 with the FLIR and did not observe any plumes and thus did not take any TVA readings.

**Photos and/or Videos:** were taken during the inspection. See Appendix B.

**Field Measurements:** were taken during this inspection. See Appendix C.

### **RECORDS REVIEW**

Ahead of the inspection, Daniel Heins requested and reviewed a site map and a list of storage tanks with details of tank product, construction, size, and applicable air regulations.

### **CLOSING CONFERENCE**

☒ Provided U.S. EPA point of contact to the facility

### **Requested documents:**

Daniel Heins requested tank levels of selected tanks at the Facility from the time of the inspection.

### **Concerns:**

Daniel Heins noted the moderately to significantly elevated hydrocarbon concentrations at all but one of the gasoline tanks, and that concentrations would likely be significantly higher towards the bottom of the tank headspace. Daniel Heins noted that this could potentially be an indication of an issue in the performance of the internal floating roof in suppressing emissions and that there is potential that the concentrations may be high enough at the bottom to pose a safety concern.

### **DIGITAL SIGNATURES**

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Daniel Heins, Report Author

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Derrick Terada, Acting Section Chief

## APPENDICES AND ATTACHMENTS

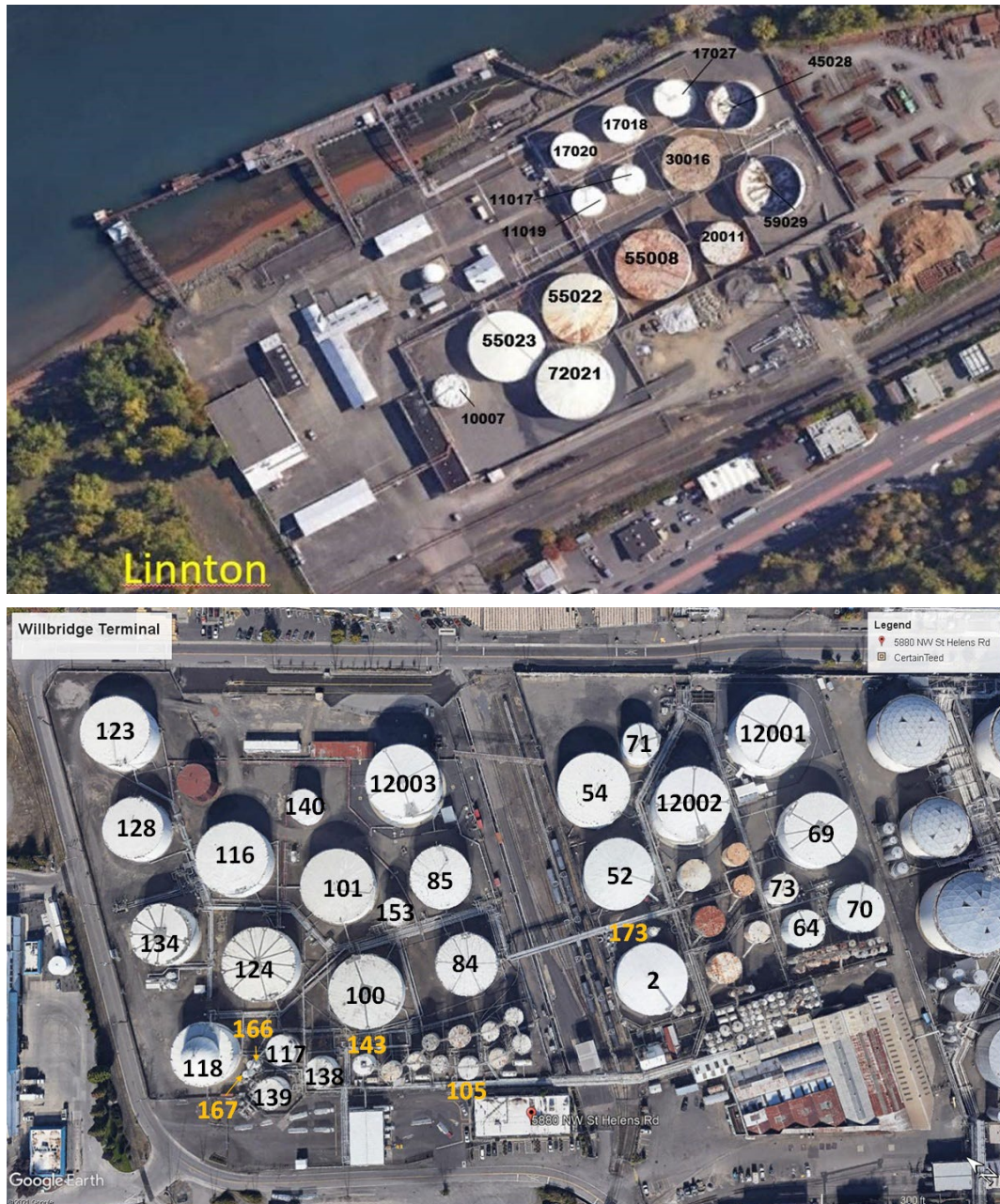
Appendix A: Site Map

Appendix B: Digital Image Log

The files listed in this log are attachments to this report.

Appendix C: Field Measurement Data

### APPENDIX A: SITE MAPS



Above are the site maps of the Linnton (top) and Willbridge (bottom) terminals provided by Kinder Morgan to Daniel Heins in advance of the inspection. The site tour was focused on the northwest (left half of bottom map) side of the Willbridge terminal.

**APPENDIX B: DIGITAL IMAGE LOG****Inspector Name:** Daniel Heins**Archival Record Location:** US EPA Sharepoint**Camera type:** FLIR GF320 optical gas imaging camera, for detecting hydrocarbon and VOC emissions.

<b>File Name</b>	<b>Date/Time</b>	<b>Tank</b>	<b>Description</b>
MOV_0700.mp4	6/22/2022 14:17	Tank 123 (Gasoline)	Plume out rim vent, viewed from ground
MOV_0702.mp4	6/22/2022 14:25	Tank 128 (Gasoline)	Plume out rim vent, viewed from ground
MOV_0703.mp4	6/22/2022 14:29	Tank 128 (Gasoline)	Plume out center vent, viewed from next to it on roof
MOV_0704.mp4	6/22/2022 14:35	Tank 85 (Gasoline)	Plume out rim vent, viewed from ground
MOV_0705.mp4	6/22/2022 14:39	Tank 101 (Gasoline)	Plume out rim vent, viewed from neighboring tank
MOV_0706.mp4	6/22/2022 14:41	Tank 101 (Gasoline)	Plumes out rim vents, viewed from neighboring tank
MOV_0707.mp4	6/22/2022 14:45	Tank 84 (Gasoline)	Plumes out rim vents, viewed from ground
MOV_0708.mp4	6/22/2022 14:58	Tank 124 (Gasoline)	Plumes out rim vents, viewed from ground
MOV_0709.mp4	6/22/2022 15:06	Tank 116 (Gasoline)	Plumes out rim vents, viewed from ground
MOV_0710.mp4	6/22/2022 15:13	Tank 134 (Gasoline)	Plumes out rim vents, viewed from ground

## **APPENDIX C: FIELD MEASUREMENT DATA**

<b>Tank #</b>	<b>Product</b>	<b>TVA PPM</b>	<b>TVA Reading Location</b>	<b>IFR Type</b>	<b>Notes</b>
123	Gasoline	1280	lifted side vent	aluminum pontoon	
128	Gasoline	1620	center vent	aluminum pontoon	
12003	Gasoline	-		steel pan	Observed with FLIR, nothing of note
85	Gasoline	380	center vent	steel pan	
101	Gasoline	2350	opened center pipe	aluminum pontoon	2250 at lifted side vent
84	Gasoline	950	center vent	aluminum pontoon	
124	Gasoline	1300	lifted side vent	aluminum pontoon	1050 opened center pipe
116	Gasoline	1170	lifted side vent	aluminum pontoon	
134	Gasoline	480	lifted side vent	aluminum pontoon	
118, 139	Ethanol	-		steel pan	Observed with FLIR, nothing of note

TVA instrument readings are given in parts per million (ppm) total hydrocarbon, as methane. All TVA reading locations are on the tank roofs.

### **Calibration and Instrument Information**

Daniel Heins used one ThermoFisher Toxic Vapor Analyzers 2020 (TVA2020), designated as TVA A95732. The EPA TVA2020 response time is approximately 4.5 seconds.

	Calibration gas ppm	A95732 ppm
08:30 calibration check	500	494
08:30 calibration check	10000	1.01%
15:45 drift check	500	441
15:45 drift check	10000	9010

### **EPA calibration gases**

Composition	Lot #	Expiration
Air zero grade THC <1 ppm	DBJ-1-24	March 2023
Methane in air 500 ppm	1-167-64	June 2024
Methane in air 10,000 ppm	228894	February 2023